

## ABSTRACT

A wireless Internet access system and method supports the transmission and reception of multiple types of traffic between mobile subscriber units and existing networks. A frame structure is used that can support the transmission of multiple types of traffic and adapt to changes in the traffic types needed and the amount of data for a particular traffic type. In addition, data transmission is performed using orthogonal frequency division multiplexing and differential phase shift keying to avoid inter-symbol interference. Receiving units in the mobile subscriber units and existing networks include antenna arrays to provide a multipath transmission.